Viron International Corporation is a leading designer and manufacturer of corrosion resistant ventilation equipment with over 45 years of experience. Our modern manufacturing facilities located in Michigan and Texas employ state-of-the-art equipment and the highest skilled workforce in the industry. Viron equipment consistently sets the bar for efficiency, durability, and low operating cost.

Viron Vi-A-Trol VCD Series heavy-duty air control dampers are engineered for ease of installation, minimal maintenance and exceptional performance. Our custom design philosophy ensures the best damper fit and function from general air balancing to full airflow isolation. They can be supplied with a variety of options including specialty resins, blade/shaft seal types, actuators, and flange patterns to meet your specific, unique system challenges.

All Viron dampers are fabricated using premium vinyl ester resins and custom formulated corrosion barriers to provide optimal chemical resistance in the most aggressive chemical fume environments. Viron Vi-A-Trol VCD dampers are routinely installed in semiconductor facilities, hospitals, university research labs, chemical processing plants, military facilities, metal finishing and waste water treatment plants.
VIRON® INTERNATIONAL CORPORATION
VI-A-TROL VCD SERIES CONTROL DAMPERS

Viron International Corporation certifies that the VCD Series Control Dampers shown herein are licensed to bear the AMCA Seal. The ratings shown are based on tests and procedures performed in accordance with AMCA Publication 511 and comply with the requirements of the AMCA Certified Ratings Program.

The AMCA Certified Ratings Seal applies to Air Leakage and Air Performance Ratings.

Test Information:
Air leakage is based on operation between 50° F and 104° F.
Tested for air leakage in accordance with ANSI/AMCA Standard 500-D, Figure 5.4
Tested for air performance in accordance with ANSI/AMCA 500-D, Figure 5.3

Torque
Data are based on maximum torque of 680 in-lb/ft² applied to close and seat the 72" damper during the test.

Leakage Performance

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<th>Damper Dia.</th>
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AMCA Allowable Air Leakage
To Achieve Leakage Classification
(cfpm/ft²)

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</table>

Air Performance

[Graph showing Pressure Drop vs. Velocity for different damper sizes (12", 24", 36")]
Furnish and install FRP control dampers at locations indicated on the drawings and as described herein.

The FRP damper components shall be fabricated using contact molding techniques in accordance with ASTM C 582 and ASTM D 3982 standards. Resin used in all parts shall be a premium grade, flame retardant vinyl ester. Any parts exposed to the airstream will include a resin-rich corrosion barrier with 30 mil chemical resistant veil backed by two layers of glass mat saturated with resin. Resin-to-glass ratios of approximately 90% resin, 10% glass will be maintained throughout the corrosion barrier. The corrosion barrier shall be a minimum 100 mils thick and formulated to provide optimal chemical resistance to airstream constituents. The structural layer shall follow and will consist of consecutive layers of chopped strand glass mat and/or alternating layers of woven roving to meet pressure requirements of the duct system. Resin-to-glass ratios of approximately 65% resin, 35% glass shall be maintained throughout the structural layer. All exterior surfaces shall be finish coated with Viron medium gray gel coat containing UV inhibitors.

Damper housings shall be one-piece construction with integral flanges. Flanges applied by secondary bonding are not acceptable. Damper blades shall be one piece, center pivot design with a full length axle permanently fastened at the blade centerline and fully encapsulated in fiberglass. The blade shall be fabricated using the same materials as the housing and will include a corrosion barrier on both blade surfaces. The maximum blade deflection at 30” W.G. shall be no more than 1/180th of the blade’s span. If necessary to limit blade deflection, blade stiffeners will be solid FRP fabricated of the same material as the blade. The axle is to be continuous through the damper and will be solid FRP pultruded round-bar conforming to ASTM D 4385.

Axle penetrations will include molded PTFE bearings to insure smooth blade rotation. Axle seals will be accessible for inspection and replacement. Seal material will be selected based on the airstream constituents and will be chosen to guarantee optimal chemical resistance. Blade seals will be EPDM continuous perimeter wiper type fastened to the blade with a FRP retaining ring and FRP encapsulated stainless steel hardware. When equipped with the EPDM blade seal the damper shall meet a minimum AMCA Class 1 Leakage. Leakage shall not exceed 4 cm per square foot. At 30” w.g. all dampers shall be licensed to bear the AMCA Seal for Leakage and Performance when tested in accordance with AMCA Publication 500. Dampers not bearing the AMCA Seal are not acceptable.

Viron VCD dampers are designed and manufactured with respect to the following industry standards:

* ASTM D 3982
* ASTM C 582
* ASTM C 581
* ASTM D 4385
* ASTM D 2583
* ASTM D 2584
* ASTM D 2563
* ASTM D 4097
* ASTM D 2996
* ASTM E 84
* ANSI/AMCA 500-D
* ASME/ANSI RTP-1
* NBS PS15-69
* SMACNA Thermoset FRP Duct Construction Manual
VIRON® VCD SERIES ROUND CONTROL DAMPERS

- **OPTIONAL FEATURES**
  - **SPECIFIC RESIN SELECTIONS**
    - REICHHOLD VER 9300 FR
    - HETRON FR 992
    - DERAKANE 510N
    - OTHER:
  - **FLANGE DRILLING**
    - ONE FLANGE
    - TWO FLANGES
  - **OPERATORS**
    - LOCKABLE HAND QUADRANT
    - WORM GEAR
    - ELECTRIC
    - PNEUMATIC
    - OTHER:
  - **BLADE CONFIGURATION**
    - EPDM BLADE SEAL
    - FKM (VITON) BLADE SEAL
    - NEOPRENE BLADE SEAL
    - FULL CIRCUMFERENCE BLADE STOP
  - **AXLE MATERIAL**
    - SOLID PULTRUDED FRP
    - 316 STAINLESS STEEL
    - OTHER:
  - **SHAFT SEAL**
    - EPDM
    - NEOPRENE
    - FKM (VITON)
    - PTFE (TEFLON)
    - DOUBLE-GLAND PTFE STUFFING BOX
  - **FLANGE DIMENSIONS**
    - SMACNA FRP DUCT CONST. MANUAL
    - NBS PS15-69
    - ASTM D3982
    - ASME/ANSI B16.5
    - OTHER:

- **STANDARD FEATURES**
  - **SOLID FRP FRAME**
  - **SOLID FRP BLADE**
  - **SOLID FRP AXLE LESS HANDLE**
  - **SHAFT SEAL**
  - MOLDED PTFE BEARINGS
  - **RESIN:** PREMIUM GRADE VINYL ESTER
  - **EXTERIOR GEL COAT**
  - **INTERIOR HARDWARE** IS POLYPRO / NYLON
  - OR ENCAPSULATED STAINLESS STEEL
  - **CHAIN WHEEL**
  - **ELECTRIC**
  - **PNEUMATIC**
  - **OTHER:**

**NOTES**
1. ALL OPTIONS PROVIDED AT ADDITIONAL COST.
2. DAMPER DESIGNED FOR 10" W.G.
3. BLADE SEALS NOT AVAILABLE WITH FULL CIRCUMFERENCE BLADE STOPS.
4. CONSTRUCTION PER ASTM C582 AND ASMD3982

**PRINCIPLE DIMENSIONS FOR 10" S. P. DAMPER**

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**NOTE:** Dimensions should not be used for construction, certified prints are available when required.
## VIRON® VCD SERIES ROUND CONTROL DAMPERS

### OPTIONAL FEATURES

**SPECIFIC RESIN SELECTIONS**
- REICHHOLD VER 9300 FR
- HETRON FR 992
- DERAKE 510N
- OTHER:

**FLANGE DRILLING**
- ONE FLANGE
- TWO FLANGES

**OPERATORS**
- LOCKABLE HAND QUADRANT
- WORM GEAR
- CHAIN WHEEL
- ELECTRIC
- PNEUMATIC
- OTHER:

**BLADE CONFIGURATION**
- EPDM BLADE SEAL
- FKM (VITON) BLADE SEAL
- NEOPRENE BLADE SEAL
- FULL CIRCUMFERENCE BLADE STOP

**AXLE MATERIAL**
- SOLID PULTRUDED FRP
- 316 STAINLESS STEEL
- OTHER:

**SHAFT SEAL**
- EPDM
- NEOPRENE
- FKM (VITON)
- PTFE (TEFLON)
- DOUBLE-GLAND PTFE STUFFING BOX

**FLANGE DIMENSIONS**
- SMACNA FRP DUCT CONST. MANUAL
- NBS PS15-69
- ASTM D3982
- ASME/ANSI B16.5
- OTHER:

**OTHER:**
- SHAFT SEAL
- MOLDED PTFE BEARINGS
- RESIN: PREMIUM GRADE VINYL ESTER
- EXTERIOR GEL COAT
- INTERIOR HARDWARE IS POLYPRO / NYLON
- AXLE MATERIAL
- OTHER:

**BLADE CONFIGURATION**
- EPDM BLADE SEAL
- FKM (VITON) BLADE SEAL
- NEOPRENE BLADE SEAL
- FULL CIRCUMFERENCE BLADE STOP

**OPERATORS**
- LOCKABLE HAND QUADRANT
- WORM GEAR
- CHAIN WHEEL
- ELECTRIC
- PNEUMATIC
- OTHER:

**NOTE:**
1. ALL OPTIONS PROVIDED AT ADDITIONAL COST.
2. DAMPER DESIGNED FOR 10” W.G.
3. BLADE SEALS NOT AVAILABLE WITH FULL CIRCUMFERENCE BLADE STOPS.
4. CONSTRUCTION PER ASTM C582 AND ASTM D3982

### PRINCIPLE DIMENSIONS FOR 30” S. P. DAMPER

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**NOTE:** Dimensions should not be used for construction, certified prints are available when required.
# Viron® VCD Series Rectangle Control Dampers

- **Optional Features**
  - **Specific Resin Selections**
    - Reichhold Ver 9300 FR
    - Hetron FR 992
    - Derakane 510N
  - **Flange Drilling**
    - One Flange
    - Two Flanges
  - **Operators**
    - Lockable Hand Quadrant
    - Worm Gear
    - Chain Wheel
    - Electric
    - Pneumatic
  - **Blade Configuration**
    - EPDM Blade Seal
    - FKM (Viton) Blade Seal
    - Neoprene Blade Seal
    - Full Circumference Blade Stop
  - **Axle Material**
    - Solid Pultruded FRP
    - 316 Stainless Steel
  - **Shaft Seal**
    - EPDM
    - Neoprene
    - FKM (Viton)
    - PTFE (Teflon)
    - Double-Gland PTFE Stuffing Box
  - **Flange Dimensions**
    - SMACNA FRP Duct Const. Manual
    - NBS PS15-69
    - ASTM D3982
    - ASME/ANSI B16.5

- **Standard Features**
  - Solid FRP Frame
  - Solid FRP Blade
  - Solid FRP Axle Less Handle
  - Shaft Seal
  - Molded PTFE Bearings
  - Resin: Premium Grade Vinyl Ester
  - Exterior Gel Coat
  - Interior Hardware is Polypro / Nylol or Encapsulated Stainless Steel

### Principle Dimensions for 10" S. P. Damper

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**Note:** Dimensions should not be used for construction, certified prints are available when required.
**VIRON® VCD SERIES RECTANGLE CONTROL DAMPERS**

### Optional Features

**Specific Resin Selections**
- Reichhold Ver 9300 FR
- Hetron FR 992
- Derakane 510N

**Flange Drilling**
- One Flange
- Two Flanges

**Operators**
- Lockable Hand Quadrant
- Worm Gear
- Chain Wheel
- Electric
- Pneumatic

** Blade Configuration**
- EPDM Blade Seal
- FKM (Viton) Blade Seal
- Neoprene Blade Seal
- Full Circumference Blade Stop

**Axle Material**
- Solid Pultruded FRP
- 316 Stainless Steel

**Shaft Seal**
- EPDM
- Neoprene
- FKM (Viton)
- PTFE (Teflon)
- Double-Gland PTFE Stuffing Box

### Principle Dimensions for 30” S. P. Damper

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**Standard Features**
- Solid FRP Frame
- Solid FRP Blade
- Solid FRP Axle Less Handle
- Shaft Seal
- Molded PTFE Bearings
- Resin: Premium Grade Vinyl Ester
- Exterior Gel Coat
- Interior Hardware is Polypro / Nylo or Encapsulated Stainless Steel

### Notes

1. All options provided at additional cost.
2. Damper designed for 10” W.G.
3. Blade Seals not available with full circumference blade stop.
4. Construction per ASTM CS82 AN ASTM D3982

**Principle Dimensions for 30" S. P. Damper**

Note: Dimensions should not be used for construction, certified prints are available when required.
LIMITED WARRANTY

VIRON® INTERNATIONAL warrants to the dealers and owners its VIRON® products and parts to be free from defects in workmanship and material under normal use and services for one (1) year after the date of shipment by VIRON to the first retail purchaser or first user: if and only if VIRON® is notified in writing of the defect within fourteen (14) days from date that the defect is discovered. Written notice of defects discovered within the final fourteen (14) days of the warranty period must be sent to VIRON® via facsimile or first class mail prior to the expiration of the warranty period otherwise this warranty shall be void. Our obligation under this warranty is expressly limited to repairing or replacing at our option, without cost at our factory any part or parts thereof which shall be returned to and received by VIRON® within such warranty period with transportation charges both to and from VIRON® prepaid, and which our examination shall disclose to our satisfaction to have been defective. In the event a defect is discovered within the final seven days of the warranty period, the returned goods must be received by VIRON® at VIRON®'s facility within seven days following expiration of the warranty period. Any request for repair or replacement should be directed to VIRON® INTERNATIONAL, Owosso, MI.

If examined equipment is found not to be defective or for some other reason not to be within the warranty coverage, seller’s service time expended on and off location will be charged to the purchaser. This warranty gives you specific legal rights which vary from state to state. FAILURE TO PAY THE INVOICE IN FULL WILL RESULT IN VOIDING ANY AND ALL WARRANTIES.

LIMITATION OF WARRANTY AND LIABILITY

This warranty does not apply to such VIRON® products and parts which in the sole judgment of VIRON® have failed as a result of faulty installation or abuse, or incorrect electrical connections or alterations, made by others, or use under abnormal operating conditions or misapplication of products and parts.

This warranty does not apply to damage resulting from shipment or storage of VIRON® products. Purchaser acknowledges that VIRON® products contain rotating parts that may be damaged by the forces of nature if not installed or put to their intended use within seven (7) days of delivery. THIS WARRANTY DOES NOT COVER COMPONENT PARTS THAT CARRY A SEPARATE WARRANTY FROM THE MANUFACTURER OF THE COMPONENT PART.

VIRON® will not approve for payment any repair made outside its factory without prior written consent of its Owosso, Michigan office. The foregoing shall constitute our sole and exclusive warranty and our sole and exclusive liability and is in lieu of all other warranties, whether written, oral, implied or statutory.

THERE ARE NO WARRANTIES WHICH EXTEND BEYOND THE DESCRIPTION ON THE PAGE HEREOF. SELLER DOES NOT WARRANT MERCHANTABILITY THAT SAID GOODS AND ARTICLES ARE OF MERCHANTABILITY QUALITY, OR THAT THEY ARE FIT FOR ANY PARTICULAR PURPOSE.

The liability of any seller on any claim of any kind, including contract, warranty, tort, or negligence, for any loss or damage arising out of or connected with or resulting from the sale and purchase of products and parts covered by any VIRON® proposal, acknowledgement, order, or from the performance or breach of any contract pertaining to such sale or purchase, or from the design, manufacture, sale, delivery, resale, installation, technical direction in installation, inspection, repair, operation or use of any products or parts covered by any VIRON® proposal, acknowledgement, order or furnished by seller, shall in no case exceed the price as paid by purchaser allocable to the products or parts therof which give rise to the claim and shall terminate one year after shipment of said products and parts.

IN NO EVENT, WHETHER AS A RESULT OF BREACH OF CONTRACT, OR WARRANTY, OR TORT, OR ALLEGED NEGLIGENCE, DEFECTS, INCORRECT ADVICE OR OTHER CAUSES, SHALL SELLER BE LIABLE FOR SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES, including but not limited to loss of profits or revenue, loss of use of the equipment or any associated equipment, cost of removal or reinstallation or any cost associated therewith, cost capital, cost of substitute equipment, facilities or services, down time cost, or claims of customers of the purchase of such damages.

VIRON® neither assumes nor authorizes any person to assume for it any other liability in connection with the sale of its products and parts. Some states do not allow the exclusion or limitation of incidental or consequential damages, so all of the above limitations or exclusions may not apply to you.